GOVERNMENT CONTROL OF SUGAR DURING THE WAR

SUMMARY

I. Introduction: The four periods of government control, 672. — II. The problems relating to sugar for the crops of 1918–19, 674. — (*a*) Problems relating to price, 674. — (*b*) Problems relating to supply and distribution, 687. — III. The solution of these problems through the formation of the United States Sugar Equalization Board, 693. — (*a*) Formation of the United States Sugar Equalization Board, 693. — (*b*) Solution of the problems relating to price, 695. — (*c*) Agreements with the various producers, 702. — (*d*) Solution of the problems relating to supply and distribution, 705. — IV. Conclusion, 710.

I. Introduction

There is hardly any aspect of government control during the war which offers so rich a field for economic analysis and study as the control of the entire sugar industry by the United States Food Administration. Initiated with modest appeals to the public by Mr. Herbert Hoover in June, 1917, for voluntary reduction in the household consumption of sugar and with a voluntary agreement with the beet sugar producers in the latter part of August, 1917, a continuous development took place, culminating ultimately in complete government control of the entire sugar trade from the points of production to the points of ultimate distribution.

The activities of the Food Administration in so far as they relate to sugar fall into four well defined periods. The first period marks the transition of the sugar industry from a peace basis to a war basis, covering in point of time the second half of the year 1917. The Food Control Act which was the legal basis for all

the activities of the Food Administration, was enacted in this period, and the Sugar Division of the Food Administration under the able executive direction of Mr. George M. Rolph, took form at this juncture as a constituent entity in the organization of the Food Administration. During this period voluntary agreements with the different sugar producers, relative to both prices and distribution of the 1917–18 crop, formed the basis of control over the industry.

The second period runs from January to about May, 1918, during which time the machinery created in the first period of governmental control, to handle the problems of the 1917–18 crop, functioned automatically with practically no amendment.

The third period, probably of greatest interest to the economist, covers the interval between May, 1918 and the signing of the armistice, in which period plans were formulated for the handling of the more difficult problems relative to price and distribution involved in the 1918–19 crop. This period witnessed the creation of a sugar corporation, the United States Sugar Equalization Board, Incorporated, the $5,000,000 of capital stock of which was subscribed for by the President of the United States out of his emergency funds, the purposes of this corporation, being, "to equalize the cost of various sugars and to secure the better distribution." [1]

The fourth period begins with the signing of the armistice. The abrupt termination of the war found the United States Sugar Equalization Board bound by several contracts, for the execution of which a continuance of the corporation was essential. Up to the date of writing, the activities of the corporation for this fourth period have been mainly of a routine nature and no important economic problems have developed, altho

[1] News Release of Food Administration, July 11, 1918, No. 1061.

it is of interest, to note the effect of governmental control upon an industry during a period of post-war reconstruction.

Since the first period has already been discussed at some length in a previous number of this journal,[1] and has been, in addition, the subject of a senatorial investigation, it will be unnecessary to treat it here. The second period covering simply the automatic functioning of the machinery created in the first period needs little discussion and the fourth period, not being a complete episode as yet, can be treated more profitably at a later date. In this paper an account will therefore be given of the third period which is indeed the most significant period.

II. The Problems Relating to Sugar in Connection with the Crops of 1918–19

(a) *Problems Relating to Price*

The third period of government control of sugar in the United States, as the following pages demonstrate, witnessed the realization of Mr. Hoover's original plan for dealing with this commodity. Speaking before the Senate Committee on Agriculture on June 19, 1917, Mr. Hoover had stated his plan [2] as follows:

> There is one other commodity which I may refer to in this matter of purchase and sale, and that is sugar. At the present moment our sugar refiners are competing with the allied sugar commission for the purchase of Cuban sugar. It must be patent that if we create a sugar commission and if that sugar commission coöperates with the Allies and the Cuban producers to take over the Cuban crop at the fixed price, that we can effect a considerable saving on the present inflated price of raw sugar, and we can stabilize the price of sugar throughout the whole of next year, because the sugar commission should be able to impose upon the refiners the necessity to pass the savings made on raw sugar through to the consumers. As there

[1] See article by Roy C. Blakey, " Sugar Prices and Distribution under Food Control," Quarterly Journal of Economics, August, 1918, pp. 567–596.

[2] From Food Administration Bulletin, No. 1, 1917.

would be a dominating amount of imported raw sugar it should be possible to maintain a stable price throughout the next year; there would thus be no incentive to speculation, and the saving to the public on its sugar should reasonably amount to 20 to 25 per cent.

There can be no loss in such an operation, because one-half of the American sugar supply would be in the hands of the Sugar Commission, and the Sugar Commission should be able to make a price to cover the whole of its outlay. In this matter, like that of wheat, we require a certain margin of cash with which to provide for bank credits. So far as I can see now there are only three or four commodities where we are likely to enter actively into the purchase and sale. In the case of wheat and sugar we have taken the opinion of the producer, of the manufacturer, and of the distributor as to the effectiveness of such operation in reducing prices to the consumer, and I feel confident that there is general agreement and entire safety and usefulness and necessity in this course. We should take similar advice before entering upon any other commodity.

But the Food Control Act, when it was enacted, did not give the Food Administration the authority to fix sugar prices directly or to make purchases of sugar as had been done abroad so that it was necessary to depend on the voluntary coöperation of the various branches of the sugar trade. Through such voluntary coöperation, the various agreements, with the domestic beet sugar producers, with the Louisiana cane sugar producers, and the cane sugar refiners were effected as well as the purchase of the entire 1917–18 Cuban crop for account of the United States and the British Royal Commission on the Sugar Supply.

Early in 1918 it became apparent that the problems relating to sugar could no longer be effectively solved through these separate voluntary agreements with the different branches of the trade and through the existing executive machinery of the Food Administration. For there were two sets of problems facing the Food Administration in 1918, the first concerned with the proper prices for the 1918–19 crops, in the various sources of supply, the second concerned with supply and distribu-

tion. In its attempt to solve these problems, the Food Administration was ultimately forced to create a commission of the sort Mr. Hoover had described before the Senate Committee on Agriculture in June, 1917. A careful examination of the problems which led to this result is essential for a clear understanding of the whole matter. These problems are set forth in the first part of this paper, and the second part is devoted to an exposition of the manner in which these problems were solved.

The difficulties of the Food Administration in regard to the price of sugar for the 1918–19 crop emerged from its accepted policy of encouraging domestic sugar production. For early in the history of the Food Administration there was definite acknowledgment of the fact that an encouragement of domestic sugar production was highly desirable mainly because of the necessity for conservation of import tonnage but also in view of the gradual reduction in the world's supply. It was hardly to be expected that war conditions with the consequent reduction of the labor supply, the high prices paid for competing crops, and the high cost of materials would allow much increase in the domestic sugar production but it was essential to take measures to maintain, at least, the normal production.

In anticipation of a possible reduction in the sugar beet acreage for the campaign of 1918–19, owing to the competition of more lucrative crops and high costs of labor and materials, Mr. Hoover sent the following circular letter to all sugar beet farmers, dated October 22, 1917:

> One of the most vital problems confronting the nation is that of procuring sufficient sugar to meet the requirements of our people and of the Allied Nations fighting our common battle. The production of cane sugar in this hemisphere can and will be increased to a limited

degree. But we must rely upon the farmers in sugar beet producing sections of the country for a part of the needed supply. I, therefore, earnestly appeal to every farmer, so situated, to come to his country's aid in this hour of need. Without the co-operation of the American beet grower our task will be very difficult and our ability to respond to the calls to be made upon us for this very essential commodity will be curtailed. It is at least the duty of every beet grower to maintain in 1918 his normal acreage of sugar beets. It is his privilege to increase the acreage to the extent that a well balanced production of crops will permit, and in this manner effectively demonstrate his patriotism. — HERBERT HOOVER.

It developed, however, that the beet farmers in the West were refusing to sign the customary contracts for acreage with the beet sugar companies because they felt themselves unjustly treated with regard to prices. Moreover, their costs of production were mounting rapidly, competing crops were becoming more profitable, and there was a feeling that with a price restricted by agreement between the sugar factories and the government, the raising of beets would become progressively less profitable in comparison with the production of other food commodities, the prices for which were not regulated by the government. Mr. Hoover thereupon appointed local commissions in the principal beet-growing states to investigate costs of production and he further urged the beet sugar companies to abide by the decisions of these commissions, promising these companies that if they would do so, the government in turn would undertake, in so far as it was able, to readjust prices for the sugar made from these higher cost beets so as to cover the increased outlay involved.

These commissions summoned witnesses and conducted exhaustive examinations in the various states, later submitting reports to Mr. Hoover. The stenographic reports [1] of the California hearings alone con-

[1] These original reports are in the files of the Food Administration. Abstracts of the California and Colorado reports were prepared and issued in the form of mimeographed bulletins.

sisted of nine thick volumes of typewritten matter, the testimony of nearly one hundred growers of sugar beets from the various sections of California having been embodied. In this state, the hearings began at Los Angeles, California, on February 5, 1918, and ended at Stockton on February 21, 1918. This commission suggested to Mr. Hoover [1] " that the price for sugar beets, should be on a basis of $8.25 per ton for fifteen per cent beets, the price to increase or decrease one-fifteenth for each one per cent the sugar content increased or decreased, and the price also to increase or decrease a dollar a ton for each cent the price of sugar increased or decreased above or below seven and one-half cents per pound."

The Colorado Commission began its investigations at Longmont, February 13, 1918 and reported to Mr. Hoover on March 6, 1918. The following extract from the report gives the general conclusions of the Commission:

> Your Commission recommends as a final price recommendation, a minimum of $9.00 per ton on a sliding scale basis which will offer $9.00 per ton for sugar beets testing over 12 and under 14 per cent, and which advances the price at the proportionate value of sugar at the minimum price when the analysis shows a percentage of sugar above this fixed minimum at the rate of 64 cents for each one per cent or 32 cents for each one-half per cent above that minimum, and which shall decrease the price at the same rate below that fixed minimum where the analysis runs under 12 per cent.

[1] From the Report of the Federal Sugar Beet Commission of California to Mr. Hoover, p. 8. This report contains much valuable information. The principal points of interest brought out in the testimony are as follows:

1. The sugar beet crop requires considerably more labor, care and attention than most other annual crops.
2. A large portion of the labor, particularly the thinning and topping of the beets, cannot be done by the farmer or his family even on small acreages.
3. Soils of varying grades of fertility are utilized for beet culture but in some regions the poorer lands are utilized and these lands are benefited thereby.
4. In 1917 the total average working cost per acre in California including repairs and depreciation on equipment, amounted to $50.80. Interest, taxes, supervision, etc., averaged about $33.00 per acre, so that the total cost was about $84.00 per acre. In Colorado the average cost was about $92.00 per acre.
5. A large portion of the land generally utilized for beet growing in California is also devoted to growing beans. In 1917 large profits were made by the producers of beans altho the growing of beans involved much less care and risk than the growing of beets.

We do not consider a flat rate equitable, altho farmers generally favor the flat rate. If your Administration decides, however, that a flat rate would meet the extraordinary circumstances better than an equitable sliding scale, we recommend $10.00 as the figure to control that flat rate.

The Nebraska Commission was appointed March 5, 1918 and reported to Mr. Hoover on April 6, 1918 as follows:

The cost of producing sugar beets has increased very rapidly, but the price paid for beets has increased less than has the price paid for hay and cereals. To meet this high cost and stimulate beet production, your Commission recommends that the growers be paid $10.00 per ton at the dump for beets, except in those areas located at some distance from the factory where the cost of production was shown to be lower than the average cost, where we recommend a price not less than $9.50 per ton.

The beet sugar factories agreed to abide by the decisions of these commissions and there is definite evidence that they carried out their promises. The Department of Agriculture reports the following average prices paid farmers for beets in 1918 in the various states as compared with other years:

AVERAGE PRICE PAID FOR BEETS PER TON[1]

State	1918	1917	1916
California	$9.95	$7.60	$6.30
Colorado	10.02	7.28	6.06
Idaho	10.00	7.06	6.16
Michigan	10.08	8.04	6.14
Nebraska	9.96	7.22	..
Ohio	10.03	7.18	6.83
Utah	10.01	7.04	5.73
Wisconsin	10.00	8.81	..
Others	9.86	7.28	6.18
United States	10.00	7.39	6.12

The percentage of increase for the United States as a whole, in the price paid the farmers for beets in 1918, as compared with 1917, was thus 35.3 per cent. This increase in the price of beets was of course reflected in

[1] From Crop Reporter, April, 1919, p. 38 and April, 1918, p. 41.

higher costs for the beet sugar factories and the outlay for beets represented 58.2 per cent of the total cost of sugar production in the years 1919 through 1914. Moreover, the cost of all other materials used in sugar production and the wages of labor had also increased rapidly.

The Tariff Commission coöperated actively with the Food Administration in seeking to determine as far as possible the actual increase in costs. The results of the investigations carried on at that time have been incorporated in part in a bulletin published recently by the Tariff Commission. In this bulletin the Commission made the following pertinent comment relative to increasing costs: [1]

> There has been a substantial advance in the prices of all the principal items entering into the production of sugar. Prices were higher for the season 1917–18 than before the war and higher for the season 1918–19 than for 1917–18. The greatest percentage advance is shown in textiles, 231 per cent for bags and 256 per cent for filter cloth. Such high percentage advances, however, add less to the cost of sugar than items such as labor, which show a lower percentage advance but are relatively more important. A rise of 200 per cent in filter cloth would add about $1.30 to the cost of a ton of sugar in 1918–19 above the cost of 1917–18, while an increase of only 40 per cent in the wages of factory labor alone would add over $3 and if the rise extended to agricultural labor, as manifested by the increased cost of beets, the increased cost of a ton of sugar would be over $12.[2]

[1] Costs of Production in the Sugar Industry, Tariff Information Series, No. 9, p. 31.

[2] On p. 31 of the pamphlet referred to above a table is presented showing percentage rates of increase for wages and prices of sundry items used in sugar production. These figures, however, represent averages for ten firms only. The following figures compiled by the Statistical Division of the Food Administration show the average percentages of increase in the various items of cost for all the firms reporting each item:

Item reported	Number of firms reporting	Average per cent of increase, 1917 over 1916	Average per cent of increase, 1918 over 1917
Beets	42	22.4	34.0
Labor	48	12.9	22.6
Transportation	20	.3	52.9
Coal	34	61.5	13.4
Coke	18	57.6	18.1
Lime or limerock	40	8.4	15.4
Bags	42	21.1	147.4
Barrels	15	12.2	71.4
Filter cloth	13	31.3	184.1

On the basis of the data submitted by the producers to the Tariff Commission and the Food Administration it was possible to compute the probable cost of producing a ton of sugar for the campaign of 1918–19 [1] for each producer and it was possible to prepare cost line curves showing the relative importance in sugar production of the low and high cost producers.

Such analysis revealed the following situation:

1. A price of 11½ cents per pound for seaboard refined sugar would have been essential to cover all producers and yield a profit of a cent a pound to the high cost producers.

2. Nine cents a pound would have been essential to cover approximately 85 per cent of the production and yield a profit of a cent a pound to the high cost producers of the group.

3. The preceding year's price, 7.45 cents a pound, would have covered but 30 per cent of the production yielding a profit of 1 cent per pound to the high cost producer.

It was therefore necessary that a price of at least 9 cents a pound for refined sugar be agreed upon if the

[1] The following table (p. 32 of Tariff Information Series, No. 9, Costs of Production in the Sugar Industry) shows the manner in which this computation was made.

Items	Cost per ton of sugar 1917–18 averages by		Percentage increase price, rate, or wage, 1918–19 over 1917–18	Estimated cost per ton of sugar in 1918–19 averages by	
	factories	tonnage		factories	tonnage
Beets	$80.04	$67.81	34.0	$107.25	$90.86
Factory labor	12.04	7.86	22.6	14.76	9.64
Coal	7.60	5.05	13.4	8.62	5.73
Coke	1.02	.68	18.1	1.20	.80
Lime or limerock	1.97	1.73	15.4	2.27	2.00
Bags	2.24	2.11	138.7	5.35	5.04
Barrels	1.37	1.28	76.4	2.42	2.26
Filter cloth	.64	.64	184.1	1.82	1.82
Other supplies	3.95	2.89	16.2	4.59	3.36
General expenses	1.22	1.22	31.4	1.60	1.60
Transportation	4.73	6.39	52.9	7.23	9.77
Total	116.82	97.66	....	157.11	132.86

The figures in the above table show the tremendous increase which was anticipated in the cost of sugar production for the campaign of 1918–19 over the previous campaign.

beet sugar production was to be maintained. Even at that relatively high price it was clear that many factories would face a loss, but, on the other hand, it was to be reasonably expected that a decreased production from this source would be counterbalanced by the increased production of the lower cost firms owing to the stimulation of a profitable price.

The domestic cane sugar producers of Louisiana were in much the same situation. Figures submitted to the Tariff Commission and the Food Administration by the Louisiana producers showed the following situation there:[1]

Cost — cents per pound (Value of molasses deducted)	Per cent of total production of sugar produced under each cost	
	Campaign of 1917–18	Anticipated for 1918–19
5 cents	11.7	2.1
5½ "	14.1	2.3
6 "	34.6	17.8
6½ "	61.2	27.3
7 "	86.4	33.9
7½ "	95.8	47.8
8 "	96.4	53.8
8½ "	98.3	74.9
9 "	99.4	91.1
9½ "	99.4	95.2

While the above figures show the cost of sugar production to be rather high for Louisiana, it must be remembered that the greatest part of the sugar produced in that part of the country is suitable for direct consumption and commands a price almost equal to that of the refiners' standard grade of granulated sugar. The cost figures above, therefore, are more comparable with the beet sugar producers' costs, rather than with the Hawaiian or Cuban cane producers' figures.

It was therefore clear from the figures submitted that a large proportion of the Louisiana sugar industry could

[1] These figures were compiled by the writer from two sets of schedules submitted by the Louisiana producers, one set having been submitted to the Tariff Commission, the other set to the Statistical Division of the Food Administration.

not be maintained on a price basis of less than 10 cents per pound for refined sugar.[1]

Investigation made by the Tariff Commission of the Hawaiian cost situation revealed a situation generally similar to the situation obtaining in the continental United States.

In contrast, however, with these high costs in the domestic industry was the condition in Cuba. Here too costs were mounting but they were not as high in the United States. The mission from the Republic of Cuba appointed by President Menocal to negotiate a price for the 1918–19 crop, submitted a brief to the Food Administration relative to the costs of production and the price for the 1918–19 crop, in which it was stated that the average cost per pound of sugar in 1916–17 for firms representing a production of 946,146 short tons or 31.28 per cent of the total crop of that year was 3.355 cents, whereas in 1917–18, the cost per pound for firms representing a production of 1,037,318 short tons or 30.1 per cent of the total crop had mounted to 3.88 cents, an increase of .525 cents per pound. The Mission stated that a price of 5.60 cents f. o. b. at the north ports of Cuba and 5.55 cents f. o. b. at the south ports would be required to sustain and to stimulate the production of sugar for the 1918–19 crop, as compared with the 4.60 cents at the north ports of Cuba and 4.55 cents at the south ports for the previous crop. The Mission thus apparently anticipated an average increase of about 1 cent per pound in the cost of sugar production in Cuba for 1919 as compared with 1918.

The price situation, as it appeared in June, 1918, may be summarized as follows:

[1] That is to say, it was anticipated that about 10 per cent of the production for 1918–19 would be produced at a cost over 9 cents per pound. A basic price of 10 cents per pound would thus be required in order to give these producers a profit of one cent per pound.

1. Cuba, which normally supplied the United States with 49.8 per cent [1] of the total annual supply, requested a basic price for raw sugar of 5.55 cents per hundred pounds f. o. b. Cuba. This price was considered sufficient to stimulate production in Cuba.

2. The domestic beet sugar industry which supplied 15.97 per cent [1] of the total annual consumption of the United States required a basic price of at least 9 cents per pound for refined sugar to maintain production.

3. The domestic cane industry in Louisiana, which supplied 6.27 per cent [1] of the total annual consumption of the United States required a basic price for refined sugar of about 10 cents per pound to maintain the production.

4. The Hawaiian industry which supplied 13.66 per cent [1] of the total annual consumption required about the same price as the domestic beet industry.

If the price of sugar was to be raised only sufficiently to meet the needs of the Cuban producers, the resulting basic wholesale price for refined sugar at seaboard refining points would have been 8.54 cents per pound. The difference between 8.54 cents and the 5.55 cents paid to the Cubans for raw sugar would have been made up as given in the table on the next page.

Between the above price of $8.54 per 100 pounds for the refined Cuban sugar at seaboard points and the basic net cash price of $8.82 [2] desired for the domestic beet sugar there was a differential of 28 cents per 100 pounds. The dilemma confronting the Food Administration was either to advance the price of sugar in the United States to 8.82 cents,[2] thus covering the needs of the domestic industry, but giving the Cubans 28 cents a 100 pounds more than they had asserted was essential to maintain

[1] Average for years 1911–12 through 1914–15, compiled from figures on p. 446 of The Cane Sugar Industry, Miscellaneous Series, No. 53, of Department of Commerce.

[2] The list price of 9.00 less 2 per cent for cash.

Basic price for 96° test centrifugal sugar f. o. b. Cuba per 100 lbs.	$5.55
Duty, freight, and insurance	1.45
Refiners' existing margin (net cash basis)	1.30
Probable increase in refiners' margin essential to meet increased cost of refining [1]	.15
Plus 7 per cent of increased price of raws [2] to refiners	.09
Basic (net cash) wholesale price for refined sugar per 100 lbs.	$8.54

and stimulate the Cuban production, or disregarding the previous promise to the domestic industry to advance the price only to $8.54, the point where the Cuban production would be maintained.

There were two objections to the first plan — the fixing of a price of 8.82 cents:

1. It would have involved the payment to Cuba by the people of the United States of about $18,000,000 more than was essential to maintain the Cuban production during 1919.

2. The Allies, particularly the United Kingdom, who wished to buy about one-third of the Cuban crop to meet their needs, as they had done in the previous year, strongly objected to making this unnecessary payment to Cuba.

There were, on the other hand, several objections to the second plan — the fixing of a price of 8.54 cents:

1. The Food Administration, as explained above, had assured the beet sugar producers that if they would abide by the recommendations of the various state commissions relative to the prices to be paid farmers for beets, the Food Administration would undertake, so far

[1] Not only were producers' costs mounting but refiners' costs as well. The refiners had complained to the Food Administration early in the year that the increased cost of labor and supplies made it essential that the margin determined upon in October, 1917 be changed. Mr. Hoover thereupon appointed Mr. Oscar S. Straus, Chairman of the Public Service Commission in New York, to investigate the claims of the refiners. An increase of about 15 cents per hundred pounds seemed essential in view of the change in conditions since October, 1917.

[2] Required to cover the 7 per cent loss of sugar in the melting process.

as it was able, to obtain for them a fair price for the sugar made from these beets. As the figures indicated above show there was no question that the beet sugar producers had done as requested and the Food Administration in turn was under obligations to maintain its previous promise.

2. The lower price would have had a tendency to discourage the domestic sugar production, every ton of which saved an equivalent amount of shipping tonnage. The importance of the domestic industry was emphasized in June by the sudden appearance on the Atlantic coast of German submarines which sank 13,000 tons of sugar in a few days.

The problem might have been solved by the imposition of an additional import duty on foreign sugars equal to the difference of 28 cents in the costs of production. To this policy there were two objections:

1. New legislation would have been necessary to effect this change and such legislation might have involved contention and delay when immediate action was essential.

2. There was a possibility of bringing sugar to the United States from Java in the Dutch ships, negotiations for which were pending in June, 1918 and this sugar, in view of the high cost of transportation might have been excluded by such an additional duty.

The one practical solution was the creation of a sugar commission, such as Mr. Hoover had suggested to the Senate Committee on Agriculture in June, 1917, which would purchase sugar in coöperation with the Allies, who already had similar organizations. Such an organization could purchase from Cuba, Java, Peru, or from any foreign source of supply at any price that was desirable with a view to better economy of supplies and shipping for all the Allies, and resell to the American refiners at an average price.

(b) *Problems Relating to Supply and Distribution*

A careful inventory made in the spring of 1918 of the available supplies for the United States for the seven months, June–December, 1918, revealed the strong probability of a sugar shortage. It was of course difficult to foretell exactly the size of the various crops at that early date. Varying weather conditions in Cuba between June and August could easily account for a difference of some 200,000 to 300,000 tons or the equivalent of almost a month's supply for the United States. The estimates for the crop by the experts varied from 3,200,000 long tons [1] to 3,589,429 long tons,[2] and it was of course advisable to use as a basis the most conservative figures. The situation then appeared as follows:

(Quantities in short tons, 000's omitted)

Stock on hand June 1, 1918		298
Raw cane (in refiners' hands)	163	
Beet sugar	85	
Refined cane sugar (in refiners' hands)	50	
	298	
Expected receipts (June 1–Dec. 31, 1918)		1,981
Cuban	954	
Hawaiian	338	
Porto Rican	189	
Domestic cane	150	
Domestic beet	350	
	1,981	
Total stocks and receipts (raw and refined)	...	2,279
Total stocks and receipts (in terms of refined)	...	2,150
Requirements for U. S. consumption in terms of refined sugar on normal basis (June 1–Dec. 31, 1918)		2,616
Deficit considering U. S. consumption only	466	
Deficit considering required minimum exports to Allies of about 200,000 tons	656	

[1] Willett and Gray's estimate.

[2] Estimate of the Cuban statisticians — Messrs. Guma and Mejer.

It was evident then that the margin between the available sugar supply and the requirements of the United States both for consumption and export to the Allies, for the year 1918, would be a narrow one at best. This situation was due to three causes, first, the efforts to restrict the consumption of sugar in the United States by appeal to the public for voluntary conservation had not been sufficiently fruitful; secondly, there was no reserve supply of consequence on hand in the United States, either in refineries, mills or warehouses, or in the hands of wholesalers, jobbers, and retailers; thirdly, the Allies in order to economize shipping were becoming increasingly dependent on the western hemisphere for their supplies. It will be of importance to consider each of these matters more in detail.

Difficulties in Restriction of Consumption. The problem of reducing the sugar consumption of the United States was an extremely difficult one. The pre-war annual per capita consumption of the United States was about 83 pounds, as compared with 42 pounds for France and 90 pounds for the United Kingdom. The per capita consumption of the United Kingdom in 1917 had been reduced to about 52 pounds while France was consuming at the rate of 35 pounds. There was, therefore, considerable room for reduction of sugar consumption in the United States. But war conditions tended to increased consumption in the United States. For one result of the war had been the increased prosperity and the increased purchasing power of a very large part of the consumers. Sugar is normally used, unlike many other food commodities, as a constituent in many other food products so that the demand for sugar multiplied in all directions. Condensed milk, candy, soft drinks, canned fruits and vegetables, ice cream, flavoring extracts, chewing gum, sweet pickles, catsup, chili sauce,

baked goods and many other edible products, all require sugar, as also certain non-edible products such as tobacco, dental preparations, drugs, explosives and glycerine. Products such as condensed milk were exported in large quantities to the Allies and the sugar so used was therefore not to be considered as consumed by the people of the United States, but the effect was to create a larger demand for sugar in this country. In addition the armed forces of the United States consumed much more sugar per capita than the civilian population. Considerable amounts were shipped for the Red Cross, Y. M. C. A., Knights of Columbus, and other war organizations.

The Food Administration had endeavored in accordance with its general policy of voluntary conservation in the first and second periods of its control of sugar to combat this tendency towards increased consumption through appeals to the patriotism of the public and of the dealers. There has been a general impression both in and out of the Food Administration that these appeals to patriotism did not result in any saving. The figures available demonstrated, however, that a saving was affected. Consumption remained at the pre-war level when a large increase in consumption would have been anticipated.

Conservation through patriotic appeal alone was not sufficient, however, particularly in view of the probable continuance of the war for another year. It was essential to create some restrictive mechanism, which the Food Administration could count upon as being definitively productive of results whenever quick results were desirable. Any card rationing scheme such as existed in Europe involved a large expense for printing cards for a population of over 100,000,000 [1] and a still greater expense for general supervision and execution.

[1] It was estimated that the printing cost alone would have been $100,000 a month.

It was obvious that to satisfactorily solve the problem there was need for the creation of such a corporation as Mr. Hoover had originally suggested which could undertake the problem of sugar distribution and control and pay the expenses of such undertaking through a profit made in the purchase abroad of the foreign sugars and the resale to the American refiners.

The Reserve Stocks. The sugar supply of the United States at any one time consists of these parts: first, the "visible" stocks, that is raw and refined sugars held in mills, factories, refineries, and bonded warehouses in the United States; second, the "invisible" supply, or sugar held by hotels and restaurants, sugar-using industries, jobbers, wholesalers and retailers; third, the sugar available from the current seasonal production in the various sources of supply, principally Louisiana, the beet sugar territory of the United States, Cuba, Hawaii, Porto Rico, and the Philippines. A gradual attenuation had occurred during the war in both the "visible" and "invisible" supplies of sugar in the United States.[1]

[1] The following figures (taken from Willett and Gray's Weekly Statistical Sugar Journal, vols. 36–41, for the years up to 1918, and from the records of the International Sugar Committee for 1918) show the decline in refiners' stocks of raw sugars at Atlantic ports refineries during the war:

STOCKS OF RAW SUGAR AT ATLANTIC PORTS REFINERIES ON 1ST OF MONTH

(LONG TONS RAWS)

Month	1912	1913	1914	1915	1916	1917	1918
January	72,849	45,065	59,934	94,677	65,181	42,190	5,697
April	186,569	184,115	157,573	116,137	92,006	274,284	27,071
July	190,110	308,767	278,590	256,849	177,436	290,718	98,643
October	89,958	155,293	260,343	131,637	94,747	56,028	29,039

Beet sugar stocks as reported by the Department of Agriculture (Food Survey, vol. ii, Nos. 7 and 17) on July 1, 1918 were 73.6 per cent of the stocks on July 1, 1917; stocks in warehouses on July 1, 1918 were but 30.5 per cent of the stocks on July 1, 1917; wholesalers' stocks were but 71.6 per cent, retailers' stocks were but 73.7 per cent. Bakers' stocks were 92.9 per cent and confectioners' stocks were 68.5 per cent of the stocks held on July 1, 1917. Milk condensers and manufacturers of preserves had larger stocks on July 1, 1918 than on July 1, 1917. The total stocks of sugar reported for the United States as a whole on July 1, 1918 were but 67.3 per cent of stocks held on July 1, 1917.

This decline was due to a combination of several factors. First, the shipping situation for the United States had not been such as to encourage the movement of more sugar from Cuba, Hawaii, and Porto Rico than was necessary to meet current needs. Second, the stabilization of prices and profits for all the branches of the sugar industry from refiner to retailer had a strong tendency to discourage larger holdings than was essential for a "hand to mouth" trade. In previous years the speculative factor had induced larger holdings of sugar particularly in those months of the year when there was heavy sugar production in all the sources of supply. During the war, on the other hand, with the price of sugar stabilized and with the prospect of equitable distribution of the available sugar supplies by government control there was no inducement to accumulate stocks. Third, there was a general world shortage of supplies, particularly for Allied and neutral countries, and this shortage forced reduced surplus holdings in all importing countries.

In view of this reduction in marginal supplies the Food Administration was constantly in fear of a sugar famine if there should be any interruption in the continuous flow of sugar to the United States from Cuba, Hawaii, or Porto Rico. Moreover there was always the possibility of labor disturbances in the sources of supply or in the ports of the United States. It was felt that it was necessary to provide the United States with a reserve supply of at least two months requirements of sugar or about 600,000 tons.[1] Such an undertaking, however, required large financial resources and could not properly be managed by the existing agencies in the Food Administration.

[1] The Food Administration was influenced in this direction by the example of the British Ministry of Food which had accumulated 271,000 long tons of sugar on June 1, 1918 as against only 30,000 tons on June 1, 1917 and 243,406 tons, the pre-war average for June 1.

The Sugar Position of the Allies. As the war continued the Allies turned in increasing degree to the United States and Cuba for supplies of sugar. The following figures show to what extent this was true:

IMPORTS INTO THE UNITED KINGDOM, FRANCE, AND ITALY FROM THE UNITED STATES AND CUBA

(Quantities in short tons)

	1913	1914	1915	1916	1917
Imports from United States (mostly refined)					
To United Kingdom	....	141,602	211,346	187,803	42,534
France	....	978	210,648	275,644	232,726
Italy	....	....	....	32,830	20,962
	....	142,580	421,994	496,277	296,222
Imports from Cuba (mostly raws)					
To United Kingdom	251,134	293,290	402,915	619,992	789,032
France	21,382	37,636	6,801	120,196	61,243
Italy	....	....	....	6,285	3,823
	272,516	330,926	409,716	746,473	854,098
Total imports from United States and Cuba — into United Kingdom, France and Italy	272,516	473,506	831,710	1,242,750	1,150,320

While the production of sugar in Cuba and the United States had increased considerably in this same period there had been a simultaneous increase [1] in consumption in the United States which partially neutralized this gain in production.

The net result of the operation of the several factors noted was to leave a smaller margin of supplies for the United States for domestic use in 1917 than was present in 1913. But in 1918 the drain from the Allies was to be even greater, since the United States Food Administration acting in coöperation with the Allied governments had purchased in December, 1917 the entire Cuban exportable surplus for the United States and Allies, a full third of which, or approximately 1,150,000 short

[1] This increase in production amounted to about 1,049,000 short tons while the increase in consumption amounted to about 225,000 short tons of refined sugar. The requirements of the United Kingdom, France and Italy from the United States and Cuba increased 877,000 tons in this period.

tons, was to go to the United Kingdom, France, and Italy. When the contract was made in December, 1917 it was believed that the needs of the Allies would be met fully by this allotment together with other minor sources of supply which they could tap. The great effort, however, put forth by the United States and the Allies in 1918 did not tolerate any waste of shipping and it was found in June that, assuming a Cuban exportable surplus of 3,472,000 short tons, at least an additional 112,000 tons of refined sugar would be required in order to maintain the meagre rations of the Allies and to prevent their recourse to distant markets such as Java.

So much then for the problems facing the Food Administration in connection with the 1918–19 crops. Solution of the price problems was required immediately since beet sugar made from the new crops was about to enter the market. The problems relating to supply and distribution were even more pressing since a severe sugar shortage was threatening. The following pages discuss the manner in which these two sets of problems were met.

III. The Solution of these Problems through the Formation of the United States Equalization Board

(a) *Formation of the Board*

As has been suggested above, the problems facing the Food Administration, relative to both prices and distribution, were capable of satisfactory solution only by the creation of government sugar corporation for which the Grain Corporation supplied a precedent. The Food Administration itself, having no authority under the

Food Control Act to buy sugar, recourse to the President's war emergency powers and funds was necessary. The corporation was created by authorization from the President of the United States who set aside $5,000,000 for the purchase of the capital stock of the corporation out of his emergency fund of $50,000,000, provided in the " Sundry Civil Act " of July 1, 1918. The Board was incorporated July 11, 1918 in the state of Delaware and the first meeting of the Board of Directors took place on July 18, 1918.

On July 11, 1918 the Food Administration issued the following notice: [1]

The President has approved the formation of a sugar equalization board by the Food Administration. The Board is to be composed of: Herbert Hoover, chairman; George M. Rolph, president; Directors: Professor F. W. Taussig, of the United States Tariff Commission; Theodore F. Whitmarsh, George A. Zabriskie of the Food Administration; Clarence Woolley of the War Trade Board; William A. Glasgow, Jr., Chief Counsel of the Food Administration. The office of the Board will be in Washington.

The purposes of the Board are to equalize the cost of various sugars and secure the better distribution. The arrangements will facilitate joint dealing with the Allies in foreign sugars and the adjustments of differentials in overseas freight rates. Under certain circumstances, it may be advisable to acquire the production of some beet sugar factories that cannot under the present price of beets be sold to the public at a reasonable price. The Board will take charge of the distribution plan initiated on July 1, and will conduct this plan at the expense of the Board. The Board will be incorporated to the extent of $5,000,000 of capital which will be supplied by the President from his special funds, in order to enable it to deal with facility in foreign sugars and otherwise and the whole stock will be held by the President for the United States Government. The object is to absorb the high peaks of cost in sugar production and to make a small margin on the low cost of certain foreign sugars which may be purchased and thus secure an equalization of the price to the public on a lower level than will otherwise be possible. The arrangements will further secure an even distribution of the sugar throughout the United States. It is expected that any profit will be equalized to the consumer over the year's operations.

[1] News Release, No. 1061.

With the formation of the Sugar Equalization Board, the sugar problem, as such, was practically solved, at least from the viewpoint of the Food Administration, since there had been created a responsible body, the function of which was the determination of general policies in relation to the various problems which might arise. Moreover, with the capital stock of $5,000,000 supplied by the President as a basis for financial operations, with the further possibility of obtaining a margin of profit on the import of foreign sugars throughout the crop year, the corporation could relieve the Food Administration of the large expense involved in the proper control of an equitable distribution.

(b) *The Solution of the Price Problem*

The directors of the Sugar Equalization Board began action looking towards an agreement on the price of sugar for 1919 by hearing the representatives of the various sugar producers. The Cuban Mission appeared before the directors of the Board on August 9 and maintained their position as previously presented to the Food Administration that a price of $5.60 per 100 pounds was essential in order to yield a fair profit to the Cuban producer. The majority opinion of the directors of the Board was that $5.25 per 100 pounds would be sufficient. No agreement was possible on this basis, and the Cuban Mission was asked to report to the Cuban government for further instructions. On the same day there appeared the representatives of the beet sugar manufacturers who presented figures of costs and requested a price for refined sugar at seaboard points of not less than 9 cents per pound. On the following day the representatives of the Hawaiian producers came before the Board, submitting cost figures and urging

that the price of their raw sugar be fixed at not less than 7 cents per pound, but recommending that the price be fixed at 7½ cents. On August 16, the directors heard the Louisiana producers who urged that the price of raw sugar be fixed at not less than 8 cents per pound.[1]

These hearings only served to emphasize what had already been made clear by the cost investigations made by the Food Administration and the Tariff Commission. The Cuban price of 5.60 cents per pound f. o. b. Cuban ports reflected a basic price for raw sugar of only 7.05 cents per 100 pounds at seaboard refining points after freight, insurance and duty were added. The resulting basic price for granulated sugar, after adding the refining margin of 1.54 cents,[2] would have been 8.59 cents. The price of 7.05 cents for raw sugars might have been satisfactory to the Hawaiians who had asked for a minimum price of 7 cents per pound, altho they had urged a price of 7.50 cents to maintain production, but would not have been satisfactory to the Louisiana producers who had requested a price of 8 cents per pound for their raw sugar. The price for refined sugar of 8.59 cents would have been unsatisfactory to the beet sugar producers who had asked for 8.82 cents.[3]

After some further negotiations with the Cuban Mission an agreement was reached. The contract was closed on September 13, 1918, the price being $5.50 per 100 pounds f. o. b. Cuban ports. The Food Administration announced that the purchase had been made on behalf of the American, English, French, and Italian governments, a departure from the preceding year's contract when the purchase was made jointly by the

1 The Porto Ricans did not send representatives to Washington since they felt that any price basis established which would be suitable for the beet sugar or Hawaiian industry would be suitable also for the Porto Rican industry.

2 Net cash basis.

3 Ibid.

United States and Allies acting through the International Sugar Committee.

While the negotiations were being conducted with the Cubans, the question of the refiners' margin was also being taken up. The report of Mr. Oscar Straus, who had been appointed by Mr. Hoover earlier in the year to investigate the cost of refining, was submitted to the Board as a basis for a decision. Mr. Straus had reported as follows:

1. That the $1.30 margin in existence from January 1 to July 1, 1918 gave a fair and adequate profit.

2. That "if conditions should remain the same for the remainder of the year no additional margin would be justified, but that the possibilities of lack of raw sugar, increase of wages, and in cost of materials, fuel, and containers would have a bearing on the proper decision."

3. "That since he could not decide upon the probability of these contingencies he referred the settlement of this matter to the Food Administration." [1]

The Board examined the figures submitted of increasing costs of labor and materials and of the probable amount of raw sugar available for melting in the period August 1, 1918–December 31, 1918. It was estimated that the amount of raw sugar available for refining for this period would be 813,676 long tons, an average of 162,735 long tons per month, as against a total of 2,138,954 tons or an average of 305,565 long tons per month for the period January 1–August 1, 1918. As matters actually developed, the amount refined in the period was 947,128 tons which was 133,452 tons above the estimate [2] but still much below the average of the first seven months of the year. The Board decided that an increase

[1] News Release, No. 1151, August 25, 1918.

[2] This increase over the estimate is accounted for by the final outturn of the Cuban crop, which was 3,444,605 long tons against Willett and Gray's estimate of 3,200,000 long tons.

in margin was justified and on August 25th, the Food Administration announced that, dating retroactively from August 1st, the new margin would be $1.45 per 100 pounds.

With the price for new Cuban crop sugars and the refiners' margin decided upon, a minimum basic price for sugar was thus established, since the new Cuban price with duty, freight, and insurance added plus the new refiners' margin would net a price for refined sugar at seaboard points of 8.49 cents. This price would, of course, have been unsatisfactory to the domestic producers, beet and cane, since this price was 33 cents per 100 pounds below the price requested by the beet sugar producers, and $1.05 per 100 pounds below the price requested by the cane producers. Moreover, on the 8.49 basis there would have been no differential accruing to the Board for financing the distribution of sugar.

Accordingly the Board decided to adopt a basis of 9 cents for refined sugar for the whole country (8.82 net cash); the differential of 33 cents per 100 pounds on foreign sugars to be turned over to the treasury of the Equalization Board. The whole plan was then as follows:

Basic price for refined sugar, cane and beet, 9 cents per pound	8.82 cents net cash
Refiners' margin	1.54
Basic price for all raw sugars, paid to the Board by refiners	7.28
Margin to the Board	.33 [1]
Cost of raw sugar to the Board	6.95
Freight, insurance, and duty	1.45
Basic price of Cuban sugars f. o. b. Cuba	5.50

[1] As it actually turned out in 1919, the margin was increased to 38 cents owing to the elimination of the war risk insurance of 5 cents per hundred pounds.

It is of interest to compare, as in the following table, the various prices actually obtained by the producers in the different sources of supply with the prices they had originally requested and with the prices in effect the preceding year:

Source of supply	Per cent of total pre-war consumption of U. S. supplied by each source of supply	Basic prices requested (in cents per pound)	Basic prices actually obtained (in cents per pound)	Basic prices in effect preceding year (in cents per pound)
Cuba (raw sugar)	49.8	5.55	5.50	4.55
Hawaii (raw sugar)	13.66	7–7.5	7.28	6.005 [1]
Porto Rico (raw sugar)	8.01	7–7.5 [2]	7.28	6.005 [1]
Louisiana (raw sugar)	6.27	8	7.28	6.35
United States beet (refined sugar)	15.97	9	9	7.30

The only remaining problem was to find a suitable date for putting the new scheme into operation. Since the new crop of Cuban sugars would not be available till December there was sufficient time to work out all details of the agreement with the Cubans. But the new beet sugar was already available in the West and it was essential, particularly in view of the scant supplies in the country, to make an agreement with the beet sugar producers in order that the 1918–19 crop might be freely available for distribution. Obviously, until this agreement was reached and the new price basis established, beet sugar producers could not ship their sugars. To put the new price into operation immediately involved having the " new domestic crop at the new price and the old foreign crop at the old price in the market at the

[1] This price was increased to 6.055 on June 24, 1918 owing to the increased cost of war risk insurance.

[2] No special price was requested but it was generally understood that the Porto Rican producers were well satisfied with the price requested by the Hawaiians.

same time." [1] To avoid this the Board decided to purchase all sugars in the refineries and cane and beet sugar mills of the United States, including all sugars in process or in transit, at the old price of 6.055 cents per pound for raw sugar and 7.35 cents for refined sugar and immediately to resell these sugars to the holders at the new price of 7.28 cents for raw sugars and 8.82 cents for refined sugars. The refiners were to be allowed the increased margin of 15 cents on all sugars delivered and invoiced from August 1st to the date when the new price was to go in effect. Through this device, the profit which would otherwise have been made by the refiners and beet sugar producers through purchase at the old price and sale on the basis of the new price, was to be absorbed by the Sugar Equalization Board. The date of this change was to be announced at a future date. On September 6, 1918, the Food Administration announced that the change would become effective on Monday morning, September 9. Wholesalers and retailers were warned not to average their prices but to sell upon the old basis until their stocks of the lower priced sugars were exhausted. From September 9 till the end of the year, the refiners purchased all their sugars from the Sugar Equalization Board at a price of 7.28 cents per pound. The Board absorbed the differential of 1.225 cents per pound between this price and the 6.055 cents per pound, the duty paid price for raw sugars of the 1917–18 crop.

As a result of these various activities, the Board drew revenue from three general sources:

1. It obtained a differential between the old and new price on the refiners' and beet sugar manufacturers' inventory of raw and refined sugar of September 9, 1918.

[1] News Release, No. 1151, August 25, 1918.

2. It obtained a differential between the old and new price on all arrivals of old crop cane sugars after September 9, 1918.

3. It obtained a differential of 38 cents [1] on all new crop foreign sugars (which began to arrive in December, 1918) between the duty paid price of $6.90 per 100 pounds for Cuban raws and the price to refiners of $7.28.

The revenue account of the Board on October 15, 1918 was as follows: [2]

UNITED STATES SUGAR EQUALIZATION BOARD, INC., REVENUE ACCOUNT

(from July 1 to October 15, 1918)

By cane sugar sales		$35,611,235.00
By beet sugar sales		3,095,011.66
Less		$38,706,246.66
Cane sugar purchases	$30,471,995.79	
Refunds on shipments to Allies under old contract	626,947.66	
Beet sugar purchases	2,579,176.37	33,678,119.82
		$5,028,126.84
By bank interest received		18,536.84
		$5,046,663.68
To salaries — general office	$5,302.07	
To salaries — federal food boards	219,616.70	
To office — general office	3,042.03	
To office expenses — federal food boards	95,543.13	322,503.93
Net income transferred to balance sheet		$4,724,159.75

[1] See footnote, p. 698 for explanation of change from 33 cents to 38 cents.

[2] From the official statement of the United States Food Administration, November 1, 1918, No. 6, p. 18.

(c) *The Agreements with the Producers and Refiners*

Once having disposed of the price problem the road was cleared for the execution of agreements with the various producers. The agreement entered into on October 24, 1918 between the Sugar Equalization Board, the Cuban Commission, and the agents of the Cuban producers contained the following provisions:

1. Sugars were to be purchased for shipment to the United States at the price of 5.88 cents [1] per pound "cost and freight," to New York or Philadelphia.
2. Sugars were to be purchased for shipment to the United Kingdom, France, and Italy at a price of 5.50 cents per pound f. o. b. northern ports or 5.45 cents per pound f. o. b. southern ports.
3. Shipments of sugar were to be made immediately after the beginning of the crop, not less than 2 per cent of the amount to be shipped on December, 1918 and the remainder in approximately equal monthly shipments from January to November, 1919.
4. Provisions were made in the agreement for brokerage, marine insurance, lighterage and so forth.

On September 18, 1918 an agreement with each individual beet sugar producer was entered into by Mr. Herbert Hoover, the United States Food Administrator, as had been done in the previous year. The main provisions of these uniform agreements were as follows:

1. A central "Sugar Distributing Committee" was created to "direct the distribution of the beet sugar crop in the most economical and efficient method consistent

[1] This price was based on the freight of .38½ cents per 100 pounds from north side ports, west of and including Caibarien, to New York or Philadelphia. The differentials between this freight rate and the rate to Boston or southern ports were to be added to or subtracted from the basic price of 5.88 cents.

with an equitable distribution of sugar where needed throughout the United States." [1]

2. Every producer agreed to abide by the rules and directions of the Sugar Distributing Committee and to sell at a price not to exceed the basic maximum price of 9 cents per pound at seaboard refining points.

3. The Sugar Distributing Committee was empowered to make a final settlement to individual producers at the close of the crop, based on the "average net proceeds per pound of sugar resulting from the sale of all sugars" [2] of the 1918–19 crop.

An agreement of the same character as that with the beet producers was entered into by the Food Administrator and the Louisiana cane sugar producers. A committee called the Louisiana Sugar Committee was created to direct the distribution of Louisiana sugar, under the supervision of the Food Administration. The basic price for raw sugar at customary Louisiana refining points was not to be "greater than the price which may be found to be just and fair by the United States Food Administrator and not less than the price of duty paid 96 degree Cuban raw sugar delivered at such refining points." [3] The minimum basic price for Louisiana raws was thus established at 7.28 cents per pound. The basic price for Louisiana refined sugar was to be the price determined by the Food Administrator "under provisions of his uniform contracts with the sugar refiners of the United States, dated October 1, 1917." [4] For the Louisiana crop of 1918–19 this arrangement meant a basic net cash price of 8.82 cents per pound.

[1] Agreement with the United States Food Administration as to Sale and Distribution of Beet Sugar Crop, 1918–19, p. 6.

[2] Ibid., p. 5.

[3] Agreement with the United States Food Administration as to Louisiana Sugars, p. 5.

[4] Ibid., p. 3.

Price differentials were established in the agreement for the many different grades of so-called " direct consumption " sugars manufactured in Louisiana.

An agreement [1] dated October 24, 1918 was entered into between the Equalization Board, the refiners of the United States, and the Food Administrator, the chief provisions of which were as follows:

1. The refiners agreed not to purchase any sugar for delivery during 1919, except from the Equalization Board.[2]
2. The allocation of sugar to the different refineries was to be based on a percentage scale which was incorporated in the agreement.
3. An " American Refiners' Committee " was created to direct the distribution to the refineries of the sugar obtained by the Equalization Board.
4. The refiners agreed to sell all their refined sugar at a price not to exceed 1.54 cents per pound above the price paid for raw sugar to the Equalization Board.
5. The Equalization Board agreed to supply the refiners with their requirements of raw sugar for 1919 at a price of 7.28 cents a pound.
6. In event of a decrease in the price of sugar in 1919 the Board agreed to pay the refiners the amount of their loss; in the event of an increase in the price of sugar, the refiners agreed to pay the Board the amount of their gain.

[1] The Federal Sugar Refining Co. felt that this contract with the refiners might constitute a violation of the Sherman Anti-Trust Act. The Food Administration therefore requested the opinion of the Attorney-General who, in a statement issued January 9, 1918, upheld the legality of the contract.

[2] Except such sugars of the 1917–18 crop as were provided for under the agreement of the previous year and Hawaiian sugars contracted for by some of the eastern refineries.

(d) *Solution of the Problems Relating to Supply and Distribution*

The Food Administration began activities aiming at an effective control of distribution in the spring at 1918. On May 4, it announced [1] that all manufacturers using sugar, with the exception of those making essential food products,[2] were to be restricted to 80 per cent of the preceding year's requirements. Manufacturers who began business or enlarged their capacity after April 1, 1918, also all manufacturers of non-edible products with certain exceptions,[3] were to receive no allowances of sugar. The restrictions were to be made effective through the use of a certificate system controlled by the federal Food Administrators of each state who were to issue certificates to all manufacturers upon receipt of sworn statement as to requirements. No sugar manufacturer or distributor was to deliver sugar to any one without first receiving certificates. All these regulations were to apply to the period from May 15 to July 1. On June 1, 1918, the Food Administration announced [4] "that manufacturers who now have on hand sugar that, when added to the amount already used this year, will bring their quotas above 80 per cent of the amount used from January to July, 1917, must turn over the excess to their administrators at once, or be prosecuted as hoarders."

The second step in the process of obtaining control over sugar consumption was the division of all users of sugar into five classes, denoted as A, B, C, D, and E. Class A comprised all non-essential industries. These

[1] News Release, No. 916.

[2] Included under this head were commercial fruit preservers and packers of vegetables, milk condensaries, jam manufacturers, and ice cream manufacturers (to encourage maintenance of milk production).

[3] These exceptions were manufacturers of tobacco, explosives and drugs.

[4] News Release, No. 985.

were to be restricted for the period July 1–September 30 to 50 per cent of their consumption in the corresponding months of 1917.[1] Class B included all the industries using sugar for preserving and canning fruits and vegetables, that is, the essential food industries. These were to be allowed their full needs. Class C included all public eating places regularly serving 25 persons or more. These were to be allowed 3 pounds of sugar for every 90 meals served in the third quarter of 1917.[2] Class D included all manufacturers of baked goods, who were to receive 70 per cent of the 1917 consumption. Finally, Class E included retailers and all dealers selling sugar for direct consumption, who were to be allotted their requirements based on 3 pounds per customer per month. This plan, directed from Washington, was put into operation by the state Food Administrators through the use of certificates. The retail grocer and the other classes of businesses described above received from their state Food Administrators "Sugar Distribution Certificates" of different quantitative denominations covering their sales of sugar to different types of customers. These certificates passed from retailer to wholesaler and from wholesaler to refiner or beet sugar manufacturer, unless, of course, the retailer bought directly from the refiner or manufacturer of sugar. The refiner or manufacturer then returned these certificates to the state Food Administrators who had issued them.

The whole plan thus involved the creation of a clerical staff in each state to attend to the issue and cancellation of certificates and a considerable expense was thus imposed upon the offices of the state Food Administrators. This expense was assumed by the United States Sugar

[1] Manufacturers of milk chocolate, however, could use 75 per cent of the amount of sugar used during the third quarter of 1917 for condensed milk.

[2] The month of June, 1918 could be used as a basis instead of the third quarter of 1917.

Equalization Board when it undertook the control of the entire plan shortly after its incorporation. One of the directors of the Board, Mr. George A. Zabriskie,[1] had already been appointed to take charge of the wholesale and retail sugar distribution for the United States and the Board assumed financial control as well.

The whole scheme under the Board's jurisdiction worked out about as follows:

1. The President of the Board constantly communicated with the Cuban Producers' Committee and with the Allies through the offices of the International Sugar Committee [2] and determined the amount of the Cuban 1917–18 crop available for distribution to the United States after the Allied requirements had been met. From the Statistical Departments of both the International Sugar Committee and the United States Food Administration and from representatives in each locality, he received information as to the amount of sugar available from other than Cuban sources of supply — Porto Rico, Hawaii, Philippines, etc. The Army and Navy, the Red Cross, the Belgian Relief, the Y.M.C.A., Knights of Columbus, and other relief organizations advised him of the amount of sugar they would require and finally the United States Shipping Board advised him of the amount of shipping tonnage that could be utilized to transport sugar to the United States. It was thus possible to approximate the amount available for civilian sugar distribution in the United States for each month.

2. A scheme of equitable allocation to individual states was then worked out based on the population of

[1] Mr. Zabriskie had been in charge of flour distribution and on June 25, 1918 the Food Administration announced that both flour and sugar wholesale and retail distribution would be attended to from his office as the distribution division of the Food Administration.

[2] This was the organization created in December, 1917 to allocate the 1917–18 Cuban crop among the Allied governments and to the various refiners of the United States.

each state, the normal needs of each state[1] and the normal sugar deliveries into each state.[2]

3. Each state Food Administrator then was notified as to the amount available for distribution for his state each month for all civilian purposes. The details of the distribution within the state under the certificate scheme were left to the discretion of the state Food Administrator.

By virtue of agreements entered into by the Food Administrator with the Louisiana sugar producers and the beet sugar manufacturers, central distributing committees were created to handle the distribution of the new crop domestic sugars under the direction of the Sugar Equalization Board in accordance with requirements for an economic and equitable distribution for the country as a whole, while through the agreement with the cane sugar refiners, the Board was able to direct the movement of sugars leaving the refineries. Thus it was possible to move sugars at any one time from regions of plenty to regions of scarcity, any unusual expenses incurred in such movements being met out of the funds of the corporation. In practical operation it was found essential to divide the country into zones of distribution, each zone being supplied from the nearest and most effective sources of supply.[3]

The scheme as outlined above was extremely effective in the creation of a rigorous yet elastic control over sugar consumption and distribution. The sugar ration for household use and the allowances to the various in-

1 Including the requirements of its industries as determined from statistical investigation by the state Food Administrators.

2 As reported by refiners and beet sugar manufacturers to the Food Administration.

3 The rules and regulations issued from time to time to beet sugar factories, refiners, and Louisiana producers relative to distribution are too many to discuss in detail here. Briefly, however, the general plan was to increase the territory of the beet sugar producers as increased beet sugar supplies became available while at the same time decreasing the territory in which cane sugar refiners or Louisiana producers could sell their sugars, thus husbanding the available supplies in regions of greater relative scarcity.

dustries were changed from time to time as the outlook for available supplies and shipping tonnage changed. Thus for the period from August 1 to November 1 the household ration was fixed at 2 pounds per person per month while for November it was increased to 3 pounds. The signing of the armistice made it unnecessary to continue rigid control and the certificate scheme was abandoned on December 1, 1918. More drastic restrictions of non-essential industries were contemplated from November 1 on, some of which were put into effect for November, but the signing of the armistice rendered such action unnecessary.

Many estimates have been made of the reduction in sugar consumption brought about in the four months of complete control, July–October, 1918, through the plan of restriction outlined above. Such attempts are of little value, first, because there are no accurate or reliable statistics of consumption in previous years, secondly, because such statistics as are available do not relate to actual consumption by consumers but to deliveries of sugar from manufacturers or refiners to the distributing trade. Moreover, no one can tell what the consumption would have been without rigid restrictions at a time when the demand for sugar was great in all directions owing to the general economic prosperity and the relatively low price of sugar as compared with other foods.

The imperative need, as stated above, was not the restriction of consumption to some particularly low point but the creation of some scheme of restriction which could be made to respond to the changing conditions of supply and tonnage. This the Food Administration accomplished without question since each state could only obtain as much sugar as was allotted to it and the problem of sugar distribution thus became a

matter of routine bookkeeping merely. Had the war continued another year it might have been advisable to embark on a policy of restriction of consumption, as a measure of economy of labor power, shipping tonnage, and fuel, and in that case, the Food Administration would have had the machinery for the purpose ready. Happily, however, the war ended and it was unnecessary.

IV. Conclusion

It will be noted that the signing of the armistice in November came but a few months after the various agreements with the producers, the creation of a new price basis, and the establishment of an effective control of distribution. Sufficient time had elapsed, however, to prove the practicability and soundness of the plan of dealing with all sugar problems through a government corporation.

An evaluation of the activities and policies of the Food Administration in dealing with sugar problems can hardly be attempted without going far afield into a criticism of the general policies of the Food Administration as applied to all commodities. Such a criticism is beyond the scope of this paper but it is necessary to note that considerations such as the relative food value of sugar in the nutritional intake of the nation, the inadvisability of incurring economic friction and popular discontent in an attempt to curb consumption through drastic compulsory measures, and the inadvisability of disturbing ordinary channels of trade and normal commercial practice in view of a possible sudden termination of the war were factors of great importance, consciously or unconsciously, in determining the policies of the Food Administration. It is only possible in this paper to note the important economic effects of government control of

sugar, first, the effect on production, second, the effect on prices.

The Cuban crop of 1917–18, which was the first crop produced under an agreement with the Food Administration was 3,446,083 [1] long tons or 422,363 tons greater than the preceding Cuban crop which was the largest crop up to that year, and the present year's crop produced under agreement with the United States Sugar Equalization Board is estimated at 4,000,000 long tons, or about 554,000 tons greater than even the previous record crop.

The beet sugar crop of the United States of 1917–18, the beets of which were planted in the spring of 1917 before Food Administration activities began, was 765,-207 short tons,[2] representing a decline of 55,450 tons from the previous year's high record but 49,000 tons above the pre-war average. The beet sugar crop of 1918–19 which was produced under direct encouragement of the Food Administration as explained above was 765,063 tons, practically equivalent to the preceding crop. The Louisiana cane crop[3] was 243,600 short tons in 1917 as against 303,900 short tons in 1916 and a pre-war average of 229,000 tons, but in 1918 it rose to 263,450 short tons. The Porto Rican and Hawaiian crops show slight decreases for the last two years. The combined production in those sources of supply affected by government control increased 206,000 long tons in 1917–18 over 1916–17, and 1,301,000 tons over the pre-war average, and in 1918–19 increased 586,000 tons over the 1916–17 and 1,867,000 tons over the pre-war average. Whether or not the Food Administration was responsible for all of this increase, it is difficult to determine,

[1] Figures for Cuban production from Willett and Gray's Weekly Statistical Sugar Journal, June 12, 1919, p. 268.

[2] Crop Reporter, April, 1919.

[3] Ibid., January, 1919.

but it certainly cannot be seriously maintained in view of these statistics that the Food Administration policies tended to discourage production.

The facts as to prices are no less significant. In order to obtain this larger production, was the American consumer forced to pay an abnormally high price? The retail price of sugar increased from an average of 8 cents per pound in the year 1916 to 9.3 cents per pound in 1917 and 9.7 in 1918. Since the per capita consumption of sugar in the United States was about 79, 78 and 73 pounds in 1916, 1917, and 1918 respectively, including sugar used in all manufactured articles, the per capita cost of sugar amounted to $6.32 in 1916, $7.25 in 1917 and $7.08 in 1918, an increase of 14.7 per cent in 1917 over 1916 and 12 per cent in 1918 over 1916. The total sugar consumption of the United States for these three years amounted to about 3,658,607 tons, 3,683,599 tons and 3,495,606 tons [1] so that the sugar bill of the nation was about $665,622,000 in 1916, $767,367,000 in 1917 and $759,525,000 in 1918.

Yet altho the retail price of sugar increased only 21 per cent and the per capita cost only 12 per cent from 1916 to 1918, the beet farmers of the United States received an average price of $10.00 per ton for beets in 1918 as against $6.12 in 1916,[2] an increase of 63 per cent, while beet sugar manufacturers received an average of $8.12 per 100 pounds [3] in 1918 as compared with $6.98 in 1916, an increase of 16 per cent. Similar increases were obtained by the American refiners, the Louisiana sugar producers, the Cubans, Hawaiians, and Porto Ricans in accordance with their increasing respective costs.

[1] In long tons from Willett and Gray's Weekly Statistical Sugar Journal.

[2] Crop Reporter, April, 1919.

[3] Calculated from figures of Truman G. Palmer, "Concerning Sugar," p. 48.

The statistical evidence at hand indicates, therefore, that the American consumer did not pay for all the increase in costs of production of sugar, nor did he pay a premium for the increased production that resulted during government control. The general conclusion, to be drawn, both from the viewpoint of production and the viewpoint of prices, is that government control of sugar during the war was a decided success.

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